

U.S.S.N. 10/658,708

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CENTRAL INFORMATION

JAN 12 2003

Specification Amendments

Please replace the paragraph beginning on line 3, page 19, with the following rewritten paragraph:

Referring next to FIGS. 2-4, in typical application of the developer dispensing apparatus 32, the wafer 46 is initially placed on the chuck 40 with the photoresist-patterned surface 50 of the wafer 46 facing upwardly. Next, by actuation of the respective ring actuating cylinders 56, the knife ring 42 is lifted in the apparatus 32 until the upper edge 42a of the knife ring 42 is located at a gap distance 43a of from typically about 0.1 mm to about 0.4 mm with respect to the backside 48 of the wafer 46, as shown in FIG. 3. Next, a selected quantity of the developing liquid 34 is dispensed from the nozzles 38 of the dispensing head 36, onto the wafer 46 until a puddle of the developing liquid 34 forms on the wafer 46 as further shown in FIG. 3. Simultaneously, the chuck 40 is operated to rotate the wafer 46 at selected rotational speeds to draw the developing liquid 34 uniformly over the wafer surface 50 by centrifugal force. As it is dispensed onto the wafer 46, the developing liquid 34 has a tendency to flow beyond the edges of the wafer 34 by centrifugal force and across the wafer backside 48 by

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capillary action. Accordingly, the small gap distance 43a of typically from about 0.1 mm to about 0.4 mm between the wafer backside 48 and the upper edge 42a of the knife ring 42 tends to retard flow of the developing liquid 34 across the wafer backside 48 to the chuck 40, thereby preventing contamination of the chuck 40 by the developing liquid 34. ~~Since the conditioning disc 68 which consists of the hub-shaft 72, the hub-spacer 76 and the circular disc 74 operates in high-torque during the pad conditioning process, the screws 82 that fasten the hub-spacer 76 to the hub-shaft 72 frequently break under such high torque operating conditions. When a failure, or breakage of the screws 82 occurs, the hub-shaft 72 becomes loose from the hub-frame 70 and causes a catastrophic failure of the conditioning head 52. Such failure leads to a total breakdown of the chemical mechanical polishing apparatus and a significant drop in the fabrication yield.~~